REMARKS

Claims 1, 3 and 5-11 are pending in the application.

Rejection under 35 U.S.C. 102

Claims 7-11 stand rejected under 35 U.S.C. 102(b) as being anticipated by *Newton et al. (US 4,833,866).*

Claim 7 defines a method for determining and controlling a bale length on a pick-up baler for agricultural harvested material according to claim 1. In the method, first an actual length change is measured with at least one sensor for each bale growth step that is defined by completion of a feed stroke moving harvested material from the feed channel into the pressing channel and a subsequent pressing stroke compressing the harvested material. The measured actual length change values of the bale growth steps are sent to an electronic evaluation device. The measured actual length change values of the bale growth steps are converted in the electronic evaluation device into at least one of an averaged operand and a statistical operand. A number of nominal feed strokes is calculated in the electronic evaluation device by means of a selectable algorithm based on the at least one averaged operand and statistical operand and at least a pre-selected nominal bale length. In the electronic evaluation device the number of actual feed strokes carried out in the bale growth steps is compared with the number of nominal feed strokes and, upon reaching the number of nominal feed strokes, the tying device is triggered.

The cited reference relates to a nuclear waste box handler and not to an agricultural pick-up baler.

In the agricultural pick-up baler of the present invention, the length of the stroke of the pressure piston is always the same, based on the construction of the device. The power take-off shaft of a tractor vehicle drives via a cardan shaft (universal joint shaft), coupling 6, and main gearbox 7, a crank gear 8 that is connected by a piston rod to the pressing piston 9. The piston 9 is thus moved in a reciprocating fashion approximately horizontally within the pressing channel 10. As a result of the fixed connection of piston 9 and crank gear 8, the piston stroke is always the same. The piston always moves the harvested material that is fed in through the feed channel 12 to the same end position and

the harvested material that is added to the already existing bale portion causes the bale portion to be moved down the pressing channel 10. The moving bale portion causes the wheel 21 to turn and the rotation of the wheel 21 provides a measure of the actual length change of the bale caused by the piston stroke. It is particularly important that the harvested material introduced into the pressing channel will have a density that is as close as possible to that of the already compressed material and to that of the material that will be added in the subsequent stroke. Because of the different properties and behavior of harvested material, the compaction that is already carried out in the feed channel is of great importance also; the bale growth step is therefore defined as completion of the feed stroke (including the degree of filling of the feed channel; see paragraph 0015 of the specification) and the pressing stroke.

In contrast to this, the waste box handler of the cited reference pushes material against a gate 40. The distance of the front end of the piston relative to the gate 40 is measured by the photo eye assembly 48. With each stroke, more material collects in front of the gate 40 and the stroke of the ram becomes shorter each time; see col. 4, lines 23-46. This means also that the material at the gate 49 is compressed more than the material being added; the material added last has the least compression. This type of compression is not suitable for agricultural goods where a uniform compression within the bale is desired.

Moreover, what is actually measured is the ram stroke and not the actual bale length change. The bale length change must be calculated by subtracting the current stroke length from the prior stroke length.

When forming the bale in accordance with *Newton et al.*, each increment of bale length growth is calculated based on the difference of the stroke length; at the same time the average growth of the bale per stroke is calculated and the total bale length as a sum of the increments. The control unit adds in two separate computations the calculated average stroke length to the actual total bale length; if the resulting theoretical total bale lengths are greater than the desired bale length value, the last stroke of the ram is limited so as not to exceed the desired bale length. No tying device is triggered.

This method does not calculate a **number of nominal feed strokes** by means of

a selectable algorithm based on at least one of averaged operand and statistical operand and at least a pre-selected nominal bale length. This method also does not compare the number of actual feed strokes and the number of nominal feed strokes, and does into trigger a tying device when the number of nominal feed strokes is reached.

In order to fulfill the method steps of the present invention, *Newton et al.* would have to calculate the following based on an averaged operand, for example:

the first and second added lengths based on the first and second ram strokes of 5 inches and 7 inches (see line 32 of col. 4) must be averaged to provide the averaged operand (-> 6 inches); based on the 6 inch added length per stroke and based on the desired bale length of 40 inches, the number of strokes to be performed at this time (after completion of the second stroke) is: **4.6 strokes** (40 inches - 12 inches = 28 inches of remaining bale length growth; divided by the averaged added length of 6 inches).

The same can be done when employing a statistical operand from previous operations. If statistically the added length per stroke is 5 inches and the desired bale length is 40 inches, the number of strokes for producing the desired bale length is **8 strokes.**

The method according to the invention then provides that this number of nominal strokes is compared with the number of strokes that are actually carried out. It is thus possible to operate the baler such that the baler is set from the start to perform 8 strokes and to trigger the tying device after completion of the eighth stroke.

Newton et al. nowhere suggest that the **number of strokes** is to be calculated. The method of Newton et al. monitors each added length and calculates after each ram stroke the bale length growth and determines whether the next stroke, based on the averaged stroke length or the maximum stroke length, will lead to exceeding the desired stroke length. This does not in any way anticipate the instant method steps of:

- **calculating a number of nominal feed strokes** in the electronic evaluation device by means of a selectable algorithm based on the at least one of averaged operand and statistical operand and at least a pre-selected nominal bale length;
- **comparing the number of actual feed strokes** carried out in the bale growth

steps **with the number of nominal feed strokes;**

- triggering the tying device when the number of nominal feed strokes is reached.

Reconsideration and withdrawal of the rejection of the claims 7-11 pursuant to 35 USC 102 are therefore respectfully requested.

Rejection under 35 U.S.C. 103

Claim 1 stands rejected under 35 U.S.C. 103(a) as being unpatentable over *Lippens et al. (US 6,134,870)* in view of *Newton et al. (US 4,833,866)*.

Lippens et al. discloses a baler with a pick-up, a feed channel, a pressing channel, a conveying device for feeding material in a feed stroke from the feed channel into the pressing channel, a pressing piston and a tying device. According to the examiner, *Lippens et al.* fails to disclose a sensor for detecting the bale growth from compression of the harvested material and an electronic evaluation device. The reference further lacks the feature of supplying the bale growth value to the evaluation device so that the required number of feed strokes for the nominal bale length can be determined, wherein the tying device is triggered when the nominal number of feed strokes is completed.

The examiner cites *Newton et al.* to show a sensor 48 for detecting the length change of the bale; an electronic evaluation device 46 for converting the length change to an average operand and for determining the required number of strokes and for triggering the tying device. In examiner's opinion it would have been obvious to use the sensor and evaluation device of *Newton et al.* in combination with the device of *Lippens et al.*

As pointed out above, *Newton et al.* has a photo eye arrangement that measures the ram stroke. The device of *Lippens et al.*, like the instant baler, has a reciprocating plunger 24 that is driven by pitman rods 25 linked to crank arms 26. Because of this arrangement, the plunger 24 is forced to carry out the same stroke every time. Therefore, a sensor arrangement as disclosed in *Newton et al.* where the varying length of the ram stroke is measured to determine bale growth cannot be used in *Lippens et al.* The combination of the sensing device of *Newton et al.* with the baler of *Lippens et al.* is technically impossible for the purpose of determining bale growth.

Moreover, as discussed in detail above in connection with the 102 rejection of claims 7-11, *Newton et al.* does not calculate the **number of feed strokes** for reaching the bale length.

Claim 1 is clearly not obvious in view of the combination of the cited references.

Claim 3 stands rejected under 35 U.S.C. 103(a) as being unpatentable over *Lippens et al. (US 6,134,870)* in view of *Newton et al. (US 4,833,866)* and *Mesmer et al. (US, 6,708,478)*.

Mesmer et al. show a remote control device for setting a desired bale length value. The growth of the bale length is measured by a wheel 16. This reference provides no teaching in regard to measuring the actual bale length growth for each feed stroke/pressing stroke and calculating the number of strokes for completing the desired bale length.

Claim 5 stands rejected under 35 U.S.C. 103(a) as being unpatentable over *Lippens et al. (US 6,134,870)* in view of *Newton et al. (US 4,833,866)* and *Schrag (US, 5,782,175)*.

Schrag discloses a wheel for measuring the change in bale length. The arrangement of *Newton et al.* employs the ram stroke (measured by photo eye arrangement) for measuring the bale growth. A wheel like the one in *Schrag* cannot be used in connection with the arrangement of *Newton et al.*

Claim 6 stands rejected under 35 U.S.C. 103(a) as being unpatentable over *Lippens et al. (US 6,134,870)* in view of *Newton et al. (US 4,833,866)* and *Innes (US, 2,030,031)*.

Innes discloses a metering device in the form of a wheel 15 that activates by means of cam 71 and links 73, 74 the tying device. This has nothing to do with measuring the length of the tying material that is being used for tying the bale.

Reconsideration and withdrawal of the rejection of the claims 1, 3, 5, and 6 pursuant to 35 USC 103 are therefore respectfully requested.

CONCLUSION

In view of the foregoing, it is submitted that this application is now in condition for allowance and such allowance is respectfully solicited.

Should the Examiner have any further objections or suggestions, the undersigned would appreciate a phone call or **e-mail** from the examiner to discuss appropriate

amendments to place the application into condition for allowance.

Authorization is herewith given to charge any fees or any shortages in any fees required during prosecution of this application and not paid by other means to Patent and Trademark Office deposit account 50-1199.

Respectfully submitted on June 22, 2006,

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